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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,387	12/28/2000	David M. Hoffman	15-CT-5419	6352

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EXAMINER

KAO, CHIH CHENG G

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,387

Applicant(s)

HOFFMAN, DAVID M.

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujise (US Patent 4641328) in view of Pfoh et al. (US Patent 5,400,379).

Fujise discloses a method of imaging an organ (Abstract, lines 1-6) comprising scanning with a source and detector coupled to a rotating gantry and reconstructing an image (Fig. 1).

However, Fujise does not disclose acquiring data from a plurality of staggered half detector segments.

Pfoh et al. teaches acquiring data from a plurality of staggered half detector segments (Fig. 4b and abstract, line 4).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to acquire data from a plurality of staggered half detector segments of Pfoh et al. with the method of Fujise, since one would be motivated to obtain more acquire multiple slices during a single revolution of the gantry as shown by Pfoh et al. (col. 1, lines 58-69).

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2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujise in view of Pfoh et al. as applied to claim 1 above, and in further view of Cuppen (US Patent 6,259,766).

Fujise view of Pfoh et al. suggests a method as recited above.

However, Fujise does not disclose acquiring data with different resolutions as a function of position in the x-direction.

Cuppen discloses acquiring data with different resolutions as a function of position in the x-direction (Fig. 3).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to acquire data with different resolutions of Cuppen with the method of Fujise in view of Pfoh et al. since one would be motivated to perform faster and more accurate volume reconstruction with a limited number of detector elements as shown by Cuppen (col. 1, lines 56-62).

3. Claims 3-6, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. (US Patent 5982846) in view of the applicant's admission of prior art (AAPA).

Toth et al. discloses a computed tomographic system (Fig. 1) with a rotating gantry (Fig. 2, #12), a multislice detector array (Fig. 2, #20), a data acquisition system (Fig. 2, #32), and an image reconstrcutuor with a plurality of removable detector modules (Fig. 5, #20) having flexible cables extending in two directions and one cable for the second type of module (Fig. 5, #70) with a pre-formed right angle bend and rails in front of the first type of module and behind the second type of module (Fig. 4).

However, Toth et al. does not disclose a plurality of staggered half detector segments abutted about a centerline with the second type of module.

AAPA teaches staggered half detector segments abutted about a centerline (Page 4, lines 16-18, and Fig. 9) with the second type of module (Fig. 8).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have the detector segments of AAPA with the device of Toth et al., since one would be motivated to have these detector segments to obtain data from the radiation as implied from Fig. 9 of AAPA.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. in view of AAPA as applied to claim 3 above, and further in view of Cuppen.

Toth et al. in view of AAPA suggest a device as recited above.

However, Toth et al. does not disclose different number of outputs per module as a function of location in the x-direction, which can be defined as higher and lower spatial resolution.

Cuppen teaches different number of outputs per module as a function of location in the x-direction (col. 5, lines 45-55), which can be defined as higher and lower spatial resolution.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have the different output of Cuppen with the device of Toth et al. in view of AAPA, since one would be motivated to perform faster and more accurate volume reconstruction with a limited number of detector elements as shown by Cuppen (col. 1, lines 56-62).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. in view of AAPA and Cuppen as applied to claim 7 above, and further in view of Hsieh (US Patent 5974109).

Toth et al. in view of AAPA and Cuppen suggest a device as recited above.

However, Toth et al. does not disclose paired cells.

Hsieh teaches paired cells (col. 2, lines 30-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have the paired cells of Hsieh with the device of Toth et al. in view of AAPA and Cuppen, since one would be motivated to avoid having to make any significant hardware and software changes to known multislice CT systems as shown by Hsieh (col. 2, lines 35-37).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. in view of AAPA, as applied to claim 9 above, and further in view of Hoffman et al. (US Patent 5799057).

Toth et al. in view of AAPA suggests a device as recited above.

However, Toth et al. does not disclose collimator plates extending in a z-direction and over the first and second type modules (Fig. 4, #62).

Hoffman et al. teaches collimator plates extending in a z-direction and over the first and second type modules.

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It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have the collimator plates of Hoffman et al. with the device of Toth et al. in view of AAPA, since one would be motivated to have provide a scatter collimator that is not complicated and cumbersome to construct, and that effectively absorbs scattered x-rays and substantially prevents such x-rays from impinging the detection array as implied from Hoffman et al. (col.2, lines 49-55).

7. Claims 12-16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. in view of AAPA, Cuppen, Fujise, and Gordon (US Patent 6188745).

For purposes of being concise, Toth et al. in view of AAPA and Cuppen suggest a device as recited above.

However, Toth et al. does not disclose imaging an organ nor using spatial resolution to reduce artifacts.

Fujise teaches imaging an organ (Abstract, lines 1-6). Gordon teaches using spatial resolution to reduce artifacts (col. 4, lines 12-30).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to image an organ of Fujise with the suggested device of Toth et al. in view of AAPA and Cuppen, since the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Secondly, one would be motivated to image an organ to see if there is anything wrong with it for more clinical information as implied from Fujise (col. 1, lines 14-23).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to use spatial resolution to reduce artifacts of Gordon with the suggested device of Toth et al. in view of AAPA and Cuppen, since one would be motivated to reduce artifacts to get better images as implied from Gordon (col. 4, lines 12-23).

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. in view of AAPA, Cuppen, Fujise, and Gordon as applied to claim 16 above, and further in view of Hsieh.

Toth et al. in view of AAPA, Cuppen, Fujise, and Gordon suggest a device as recited above.

However, Toth et al. does not disclose paired cells.

Hsieh teaches paired cells (col. 2, lines 30-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have the paired cells of Hsieh with the device of Toth et al. in view of AAPA, Cuppen, Fujise, and Gordon, since one would be motivated to avoid having to make any significant hardware and software changes to known multislice CT systems as shown by Hsieh (col. 2, lines 35-37).

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. in view of AAPA, Cuppen, Fujise, and Gordon, as applied to claim 12 above, and further in view of Hoffman et al.

Toth et al. in view of AAPA, Cuppen, Fujise, and Gordon suggests a device as recited above.

However, Toth et al. does not disclose collimator plates extending in a z-direction and over the first and second type modules (Fig. 4, #62).

Hoffman et al. teaches collimator plates extending in a z-direction and over the first and second type modules.

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have the collimator plates of Hoffman et al. with the device of Toth et al. in view of AAPA, Cuppen, Fujise, and Gordon, since one would be motivated to have provide a scatter collimator that is not complicated and cumbersome to construct, and that effectively absorbs scattered x-rays and substantially prevents such x-rays from impinging the detection array as implied from Hoffman et al. (col.2, lines 49-55).

Allowable Subject Matter

10. The indicated allowability of claims 4-6, 9, 10, and 12-20 are withdrawn in view of the newly discovered reference(s) to Gordon, Hoffman et al., and AAPA. Rejections based on the newly cited reference(s) are as recited above.

Response to Arguments

11. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

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With regards to AAPA, AAPA does show staggered half detector segments abutted about a centerline (Page 4, lines 16-18, and Fig. 9). With regards to Pfoh et al., Pfoh et al. does show acquiring data from a plurality of staggered half detector segments (Fig. 4b and abstract, line 4).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk
December 13, 2002



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